

SYLVANIA TUBE TESTER

TYPE 140

INSTRUCTION BOOK



SYLVANIA ELECTRIC PRODUCTS, INC.

PRICE 50 CENTS

GENERAL DESCRIPTION

I. REFERENCE DATA:

A. TUBE COMPLEMENT

1—Sylvania type 1LE3

B. POWER SUPPLY SOURCE

Voltage 105-125 A. C.
Frequency 50-60 cycles
Power Consumption 20 watts
Fuse Rating 0.5 ampere

C. SIZE

13" x 14 3/16" x 5 1/4"

D. WEIGHT

18 pounds

II. DESCRIPTION:

A. CIRCUIT

The basic circuit chosen for the Type 140 Tube Tester is believed to be unlike any other now available.

The circuit is designed to simulate the actual operating conditions of a tube in use. This is accomplished by applying comparative potentials to ALL elements. Under these conditions the tube is tested by inserting the test meter in the plate circuit. The resultant dynamic test is consequently extremely accurate in discriminating between "good" and "bad" tubes.

B. FEATURES:

Of special interest in the Type 140 Tube Tester is the provision that is made for economy and ease of modification to accommodate future new tube designs. All switches are provided with an extra contact and with corresponding calibrations in the control panel design. Extra socket space is also provided. This feature has been added to guard the Tester against obsolescence and keep the cost of modernization to a minimum.

SHORTS TEST—The unique shorts test circuit provides for testing all types of tubes at the proper shorts test voltage. This circuit conforms with the practices of radio tube manufacturers who have long encountered difficulty with filament type tubes being short-tested at excessive voltages in tube checkers available to the servicemen. It is now well known that short test voltages in excess of 50-60 volts will set up a powerful electrostatic field between tube grid and filament, thus giving indication of a SHORT and possibly damaging the tube being tested. The Type 140 Tube Tester applies the proper voltage at no sacrifice in the brilliancy of the SHORT indicator lamp.

ROLLER CHART—The three section roller chart incorporated in the Type 140 Tester materially reduces the testing time. Large, easy to read, type is used on the chart to minimize the chance of error.

NOISE TEST—Tubes may be tested for noise XXXXXXXXXX by use of earphones or on external amplifier plugged into the Noise Test jacks.

FILAMENT TEST—A filament test lever switch has been incorporated in the unit to facilitate quick check for open filaments.

All popular and many special purpose types of receiving tubes can be tested. The inclusion of a rugged acorn socket greatly enhances the value of the Tube Tester to those engaged in servicing high-frequency and television equipment.

The Type 140 Tube Tester is characterized throughout, by simplicity, accuracy and ruggedness.

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III. OPERATION:

A. CONTROLS

1. On-Off Switch—Turns supply voltage on and off.
2. Line Control Switch—Compensates for supply voltage variations between 105 and 125 volts.
3. Filament Volts Switch, "A"—Selects desired filament voltage.
4. High Filament Switch, "B"—Switches positive filament voltage to proper tube socket pin and provides through circuits to all other socket pins.
5. Circuit Switches 0 to 9, "C" position—Provide through circuits for negative filament voltage and also permit isolation of any tube pins from the test circuit.
6. Low Filament Switch, "D"—Switches negative filament voltage to proper tube socket pin.
7. Shorts Test Switch, "E"—Provides for a shorts test between each tube element and any combination of the remaining elements tied together. It also switches plate voltage to desired tube socket pin.
8. Circuit Switches 0 to 9, "F" position—Switch plate voltage to proper tube socket pin.
9. Plate Control, "G"—Adjusts plate load to proper value.
10. Test Switches, T to Z—Apply proper plate voltage to tube.
11. Filament Test Switch—Provides a quick visual test of tube filament continuity.
12. Noise Test Jacks—Provide an audible test for noisy noisy tubes.

B. TEST PROCEDURE

1. Throw On-Off switch to On position.
2. Adjust Line Control switch until meter reads on "Line."
3. Select tube to be tested on chart.
4. Make chart settings on A, B, C, and D controls.
5. Insert tube to be tested in proper socket.
6. Throw Fil. Test switch. If neon bulb lights, filament is good; if neon bulb does not light, filament is bad.
7. Rotate E switch through positions 0-8. If neon bulb stays lighted on any position, tube is shorted.
8. Make chart settings on E, F, and G controls.
9. Throw test switch indicated on chart.
10. Read meter.

IV. MAINTENANCE:

A. REMOVAL FROM CABINET

Remove the ten self-tapping screws around the edge of the control panel, and lift the tester out of the cabinet.

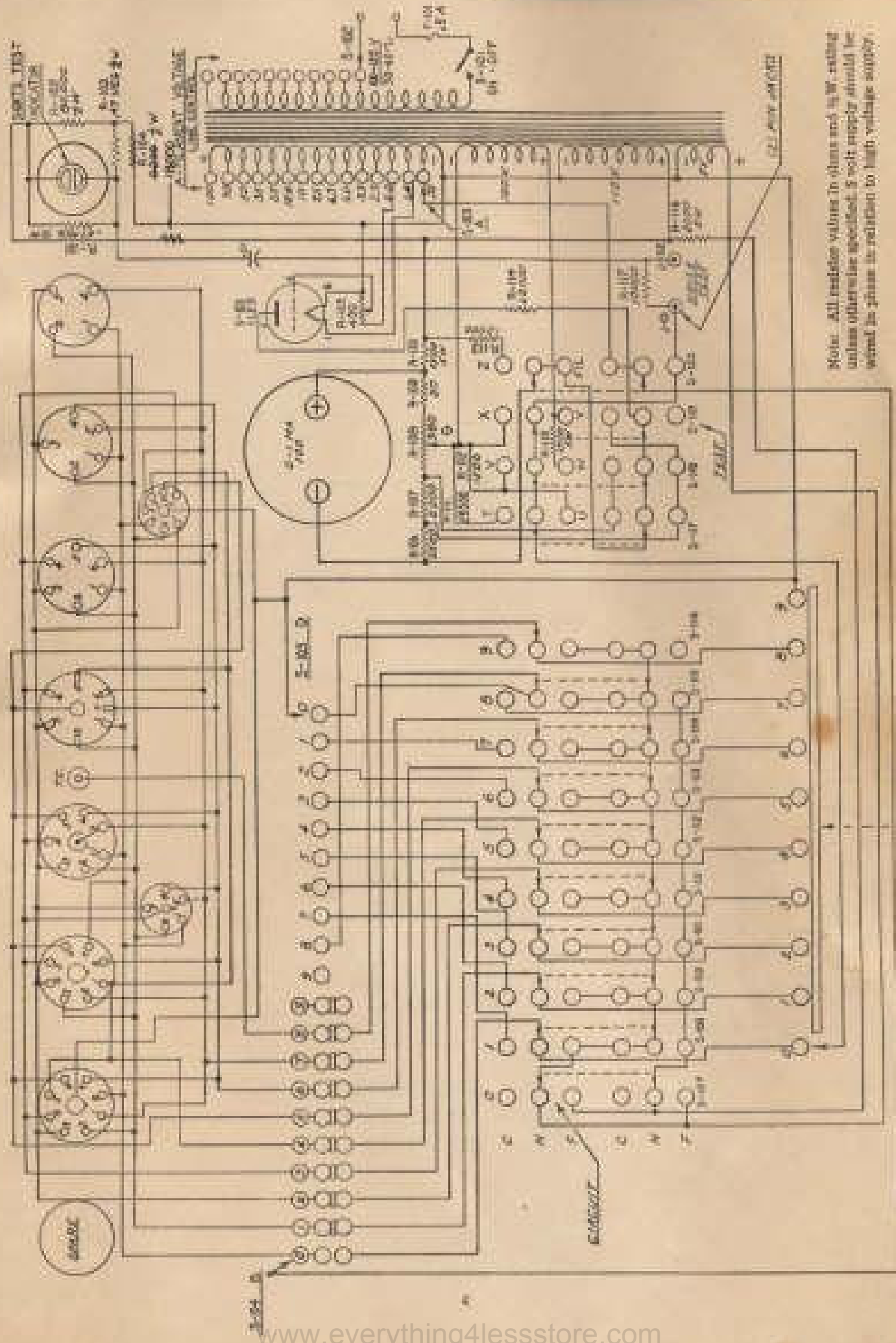
B. COMPONENTS

High quality components have been used throughout the Type 140 Tube Tester.

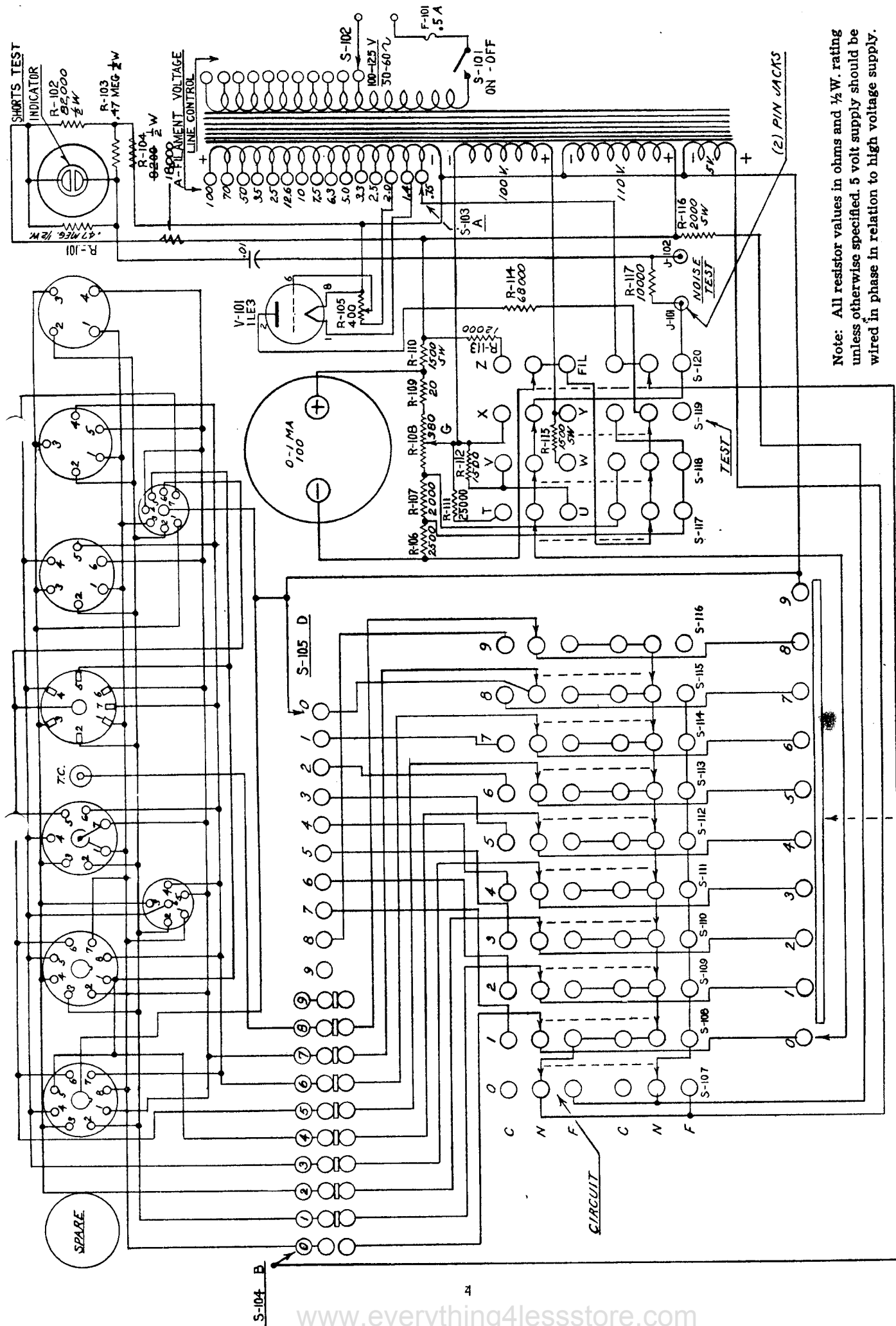
Should replacement of any components become necessary, use parts equal in rating and tolerance to those specified on the parts list.

PARTS LIST

	Sylvania Part No.
Capacitor 0.01 mfd. 400 volt	Pe. 13879
Clip—Tube Contact 12 inch leads	Pe. 11933
Fuse 3AG ½ Amp.	Pe. 3616
Holder—Fuse	Pe. 12669
Jack—Tip	Pe. 13449
Knob—Bar (small)	Pe. 11914
Knob—Bar (large)	Pe. 11915
Knob—Lever	Pe. 12681
Lamp—Neon ½ Watt	Pe. 11930
Meter	Pe. 12381
Resistor R101, R103, .47 megohm ½ W. 10%	Pe. 1052
Resistor R102 82,000 ohm ½ W. 10%	Pe. 1020
Resistor R104 2200 ohm ½ W. 10% <i>18000</i>	Pe. 978 <i>772</i>
Resistor—Adjustable R105 400 ohm 10%	Pe. 11923
Resistor R106 2500 ohm ½ W. 1%	Pe. 11927
Resistor R107 2000 ohm ½ W. 1%	Pe. 11928
Resistor—Variable R108 380 ohm 2½%	Pe. 11929
Resistor R109 20 ohm ½ W. 5%	Pe. 868
Resistor R110, R112, R115 1500 ohm 5 W. 5%	Pe. 11984
Resistor R111 25,000 ohm ½ W. 5%	Pe. 11926
Resistor R113 12,000 ohm ½ W. 5%	Pe. 986
Resistor R114 68,000 ohm ½ W. 10%	Pe. 1017
Resistor R116 2000 ohm 5 W. 5%	Pe. 11985
Resistor R117 10,000 ohm ½ W. 10%	Pe. 982
Switch—Toggle S101 SPST	Pe. 11946
Switch—Rotary S102	Pe. 11916
Switch—Rotary S103	Pe. 11917
Switch—Rotary S104	Pe. 11919
Switch—Rotary S105	Pe. 13187
Switch—Rotary S106	Pe. 11918
Switch—Lever S107—S116	Pe. 11921
Switch—Lever S117—S120	Pe. 11920
Transformer	Pe. 11881
Tube—Electron	Type 1LE3
Socket—Tube (4 prong)	Pe. 11934
Socket—Tube (5 prong)	Pe. 11935
Socket—Tube (6 prong)	Pe. 11936
Socket—Tube (7 prong)	Pe. 11937
Socket—Tube (8 prong)	Pe. 11938
Socket—Tube (lock-in)	Pe. 11939
Socket—Bantam	Pe. 11941
Socket—Miniature	Pe. 11940
Socket—Acorn	Pe. 11884
Socket—Lamp	Pe. 11956



Note: All resistance values in ohms and in K, unless otherwise specified. 5 volt supply should be wired in phase in relation to high voltage supply.



Note: All resistor values in ohms and 1/2 W. rating unless otherwise specified. 5 volt supply should be wired in phase in relation to high voltage supply.

WARRANTY

Sylvania Electric Products Inc. warrants each new Tube Tester manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect, provided the unit is delivered by the owner to us or to our authorized wholesaler from whom purchased, intact, for our examination, with all transportation prepaid to our factory, within 90 days from the date of sale to original purchaser and provided such examination discloses in our judgment that it is thus defective.

This warranty does not extend to any Tube Tester which has been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, or to use in violation of instructions furnished by us, nor to units which have been repaired or altered outside of our factory, nor to cases where the serial number thereof has been removed, defaced or changed, nor to accessories used therewith not of our own manufacture.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other warranty liability.

This warranty is void unless warranty card included with instrument is filled out completely and mailed upon initial sale of the instrument by the distributor.

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